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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/081,521	02/22/2002	V. J. Flanigan	VJF 6851.1	2948

321 7590 05/04/2005

SENNIGER POWERS LEAVITT AND ROEDEL
ONE METROPOLITAN SQUARE
16TH FLOOR
ST LOUIS, MO 63102

EXAMINER

WACHTEL, ALEXIS A

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 05/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/081,521

Applicant(s)

FLANIGAN, V. J.

Examiner

Alexis Wachtel

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 September 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19-22 and 26-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19-22, 26-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6-5-2002.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Detailed Action

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 19 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by US 5,230,777 to Jarrell.

Regarding claim 19, Jarrell teaches an apparatus for the destructive distillation of rubber to produce hydrocarbon and solid carbonaceous char comprising: a distillation chamber (24) for holding the rubber, said chamber being sealable for the substantial exclusion of oxygen from said chamber; heating (25) means associated with said distillation chamber for heating rubber in said chamber to a temperature sufficient to pyrolyze the rubber, distill a vapor comprising hydrocarbon from the rubber and produce a solid carbonaceous char; means (27) for removing said vapor comprising hydrocarbon from said chamber; means (32) for condensing hydrocarbon from said vapor removed from said chamber to produce a liquid fraction comprising hydrocarbon; means Fig.2, items 21,21a for circulating a heat transfer gas in a circulation loop, said heat transfer gas passing through said chamber and contacting said carbonaceous char to transfer heat from the char to the heat transfer gas and thereby cool the char; and means for removing heat from the heat transfer gas circulating in the circulation loop.

Regarding claim 20, Jarrell teaches an apparatus for the destructive distillation of rubber to produce hydrocarbon and solid carbonaceous char comprising: two distillation chambers (Fig.2, items 24) for holding the rubber, said chambers being sealable for the substantial exclusion of oxygen from said chambers; heating means (25) associated with each distillation chamber for heating rubber in the chambers to a temperature sufficient to pyrolyze the rubber, distill a vapor comprising hydrocarbon from the rubber and produce a solid carbonaceous char; means (27) for removing the vapor comprising hydrocarbon from the chambers; means (32) for condensing hydrocarbon from said vapor removed from said chambers to produce a liquid fraction comprising hydrocarbon; means (Fig.2, items 21,21a) for circulating a heat transfer gas in a circulation loop, said heat transfer gas passing through both of said distillation chambers such that the heat transfer gas contacts solid carbonaceous char in one of said chambers and contacts a rubber charge in the other of said chambers, heat being transferred from the carbonaceous char to the heat transfer gas in said one chamber to cool the char, and heat being transferred from the heat transfer gas to said rubber charge in the other chamber to preheat the rubber charge.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. Claims 21,22,26,27 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,230,777 to Jarrell in view of US 4,619,147 to Yoshimura et al.

Regarding claim 21, Jarrell teaches an apparatus for the destructive distillation of rubber to produce hydrocarbon and solid carbonaceous char comprising: a distillation chamber (24) for holding a rubber charge, said chamber being sealable for the substantial exclusion of oxygen from said chamber; heating means (25) associated with said distillation chamber for heating said rubber charge in the chamber to a temperature sufficient to pyrolyze the rubber, distill a vapor comprising hydrocarbon from the rubber and produce a solid carbonaceous char; means (27) for removing said vapor comprising hydrocarbon from said chamber; means for condensing (32) hydrocarbon from said vapor to produce a liquid fraction comprising hydrocarbon.

With regards to claims 21,26 and 30, Jarrell does not teach means for monitoring weight loss of said rubber charge in the chamber as a result of pyrolysis and, with regards to claims 22 and 27 that the monitoring means comprises a load cell.

Yoshimura et al teach that load cells are used in environments having explosive gases and must be constructed to survive harsh operating conditions (Col 1, lines 12-22).

Generally, load cells are used for measuring loads (Col 5-10). In view of this teaching it would have been obvious to have integrated a load cell with the reactor/chamber as disclosed by Jarrell for the purpose of measuring reactant weight.

5. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,230,777 to Jarrell in view of US 4,619,147 to Yoshimura et al and US 4,881,947 to Parker et al

Regarding claim 31, Jarrell and Yoshimura et al as set forth above fail to teach that the heating means associated with said distillation chamber comprises radiant heating tubes in which a mixture of hydrocarbon and oxygen containing gas is combusted. Parker et al is directed to a gasification system and teaches radiant tubes heated by gaseous combustion products of burners, the heat produced being transferred to the feed material (Col 3, lines 63-66). In view of this teaching it would have been obvious to one of ordinary skill to have modified the distillation chamber disclosed by Jarrell to utilize radiant tubes heated by burners since such a heating scheme would have been equivalently suited for the purpose of providing heat.

6. Claims 28,29, 32-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,230,777 to Jarrell in view of US 4,881,947 to Parker et al.

Regarding claims 28,32 and 34, Jarrell as set forth above fails to teach that the heating means associated with said distillation chamber comprises radiant heating tubes in which a mixture of hydrocarbon and oxygen containing gas is combusted.

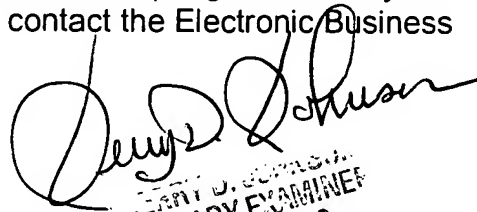
Parker et al is directed to a gasification system and teaches radiant tubes heated by gaseous combustion products of burners, the heat produced being transferred to the feed material (Col 3, lines 63-66). In view of this teaching it would have been obvious to one of ordinary skill to have modified the distillation chamber disclosed by Jarrell to utilize radiant tubes heated by burners since such a heating scheme would have been equivalently suited for the purpose of providing heat.

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Regarding claims 29,33 and 35, the limitation wherein the oxygen containing gas is air does not structurally distinguish the claimed invention over the relied on prior art.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alex Wachtel whose telephone number is 571-272-1455. The examiner can normally be reached on 10:30am to 6:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Glenn Caldarola, can be reached at (571)-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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